

R E M A R K S

Claims 1, 3-8 and 23 currently remain in the application. Claims 12-22 have been withdrawn, claims 2 and 9-11 have been canceled, claim 23 is a new claim, and claim 1 is herein amended.

Claims 1 and 3-11 were rejected under 35 U.S.C. 102 as being anticipated by Hayes. At least in part in response to the Examiner's reasons for the rejection, claim 1 is herein amended to more clearly characterize the subject matter of the invention.

As earlier pointed out by applicant, claim 1 relates to an aliphatic polyester resin composition characterized as comprising salts of aromatic sulfonate shown by Formula 1 as nucleating agent in an amount of 0.01-5 weight parts for 100 weight parts. The salts of aromatic sulfonate shown by Formula 1 are nucleating agents for aliphatic polyester resin, and are not themselves constituents of aliphatic polyester resin. In other words, aliphatic polyester resin compositions of this invention comprise aliphatic polyester resin and salts of aromatic sulfonate shown by Formula 1 in a mixed condition.

By contrast, Hayes describes sulfonated aliphatic-aromatic copolyesters (say, from [0022] to [0026]), but Hayes' aromatic sulfonates (such as a metal salt of lower alkyl ester of 5-sulfoisophthalic acid [0026]) are components forming sulfonated aliphatic-aromatic copolyesters themselves. In other words, Hayes' aromatic sulfonates are components to be incorporated into the molecules of such copolyesters as constituent units of sulfonated aliphatic-aromatic copolyesters.

If aromatic sulfonates such as Hayes' metal salt of lower alkyl ester of 5-sulfoisophthalic acid are incorporated within the molecules of sulfonated aliphatic-aromatic copolyesters as their constituent units as suggested by Hayes, it becomes difficult for such copolyesters to crystallize because their crystallization initiating temperature and the crystallization peak temperature are low, and it also will be easier for them to become stuck to the mold (because the mold release deformation is large) and to bend (because the deflection temperature under load is low). Consequently, it is not possible from Hayes' sulfonated aliphatic-aromatic copolyesters to obtain molded products with superior physical characteristics under the practical molding conditions of ordinary all-purpose resins, say, without causing deformations at the mold releasing time.

In view of the Examiner's judgment in said Advisory Action that "no factual data has (sic) been presented to support this statement", applicant is presenting simultaneously

herewith some experimental data in the form of a Declaration under Rule 132, obtained by one of the inventors herein, in order to demonstrate the statement given above. As stated in said Declaration, this demonstrative experiment was carried out by (1) synthesizing Reference copolyesters (L-4), (L-5) and (L-6) by obtaining lactic acid oligomer by carrying out a dehydration reaction of 90% L-lactic acid under a reduced-pressure condition of 160°C and 5-20mmHg for 16 hours, and causing 150g of this lactic acid oligomer, respectively 0.15g, 0.075g and 7.5g of 5-sulfoisophthalic acid dimethyl=barium and 0.75g of titanium tetrabutoxide monomer (TBT) to react inside a glass flask of 250ml to react for 6 hours in a nitrogen atmosphere with the reaction temperature maintained at 190°C, (2) thereafter mixing in phosphoric acid 0.22g (the same molar quantity as TBT) and stirring together for one hour, and (3) further adding stannous chloride dihydrate 0.83g and p-toluene sulfonic acid 1.0g and polymerizing by maintaining the temperature at 190°C under a reduced-pressure condition of 1mmHg for 17 hours. It is to be notes that each of these Reference copolyesters (L-4), (L-5) and (L-6) was obtained by a method described by Hayes (Example 1 in [0133]) and hence is to be identified as one of Hayes' sulfonated aliphatic-aromatic copolyesters.

These Reference copolyesters (L-4), (L-5) and (L-6) were used as Reference Examples 19, 20 and 21, respectively, for evaluations carried out as described in the specification and compared with the results of similar evaluations of Test Examples according to the present invention. The results of this demonstrative experiment are shown below in Tables 1b, 2b and 3b, respectively corresponding to Tables 1, 2 and 3 and using the same symbols are used before. For the ease of comparison, Test Examples 1, 6 and 7 for Table 2b and Test Examples 20, 25 and 26 for Table 3b are directly copied respectively from Table 2 and Table 3. It is to be noted that in Tables 1b, 2b and 3b, Test Examples and Reference Examples are distinguishable only in that Test Examples are each characterized as using an aliphatic polyester resin composition containing a nuceating agent in a mixed condition according to the present invention while Reference Examples are characterized as using sulfonated aliphatic-aromatic copolyesters according to Hayes.

It should be clear from Tables 1b-3b that the favorable results obtainable by the use of the kinds of aliphatic polyester resin compositions containing nucleating agent in a mixed condition according to the present invention cannot be attained by the use of the kinds of sulfonated aliphatic-aromatic copolyesters according to Hayes. In other words, it is believed that Tables 1b-3b in said Declaration adequately and appropriately represent the factual data

required by the Examiner in said Advisory Action to support the explanatory statement made by applicant.

As for the Examiner's statement in said Advisory Action that "features as molding conditions has (sic) not been part of Applicant's claimed subject matter," new claim 23 has been added to further indicate that no mold release deformation takes place in the molding operation if an aliphatic polyester resin composition of this invention is used for molding.

In summary, it is believed that the instant Amendment is totally responsive to both said Final Office Action and said Advisory Action, and hence that the application is now in condition for allowance.

Respectfully submitted,
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